



1600 South Second Street  
Mount Vernon, WA 98273-5202  
ph 360.428.1617  
fax 360.428.1620  
www.nwcleanair.org

## Air Operating Permit Excess Emissions Report Form Part II

Name of Facility	Shell, Puget Sound Refinery	Reported by	Tim Figgie
Date of notification	July 29, 2011	Incident type: breakdown/ upset/startup or shutdown	Breakdown
Start Date	July 29, 2011	Start Time:	10:00 AM
End Date	July 29, 2011	End Time:	11:00 AM
Process unit or system(s): FCCU WGS/CO Boilers			

### Incident Description

On July 29, 2011 at approximately 10:05 AM the FCCU experienced a trip on #2 CO Boiler due to a low steam drum level, which resulted in high CO in the WGS stack. Immediate steps taken to reduce the impact of this event include blowing down and calibrating steam drum level instruments and changes to the steam production rate to help the level control system. Operations followed CO boiler restart procedures, which required a purge of the boiler for 30 minutes. Operations then relit the boiler and the CO came back into compliance.

The cause of the low steam drum level is believed to be from soot buildup on the boiler tubes that caused excess heat load in the boiler economizer section. This caused flashing in the steam drum which caused fluctuations in the drum level and the trip of the boiler. The soot buildup appears to be due to failed soot blower lances. New lances will be installed to eliminate this problem.

### Immediate steps taken to limit the duration and/or quantity of excess emissions:

Drum levels were blown down and calibrated. The steam production rate was changed which helped the level control system. The boilers were restarted as soon as possible.

Applicable air operating permit term(s): 5.3.16

Estimated Excess Emissions: Based on CEMS and calculated stack flow	Pollutant(s): CO	Pounds (Estimate): 58
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The incident was the result of the following (check all that apply):

- ☐ Scheduled equipment startup
- ☐ Scheduled equipment shutdown
- ☐ Poor or inadequate design
- ☐ Careless, poor, or inadequate operation
- ☐ Poor or inadequate maintenance
- ☐ A reasonably preventable condition

Did the facility receive any complaints from the public?

- ☒ No
- ☐ Yes (provide details below)

Did the incident result in the violation of an ambient air quality standard

- ☒ No

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☐ Yes (provide details below)

Root and other contributing causes of incident:

The root cause of this event was failed soot blower lances that resulted in heat carryover to the economizer section, which resulted in steam drum level fluctuations that tripped the boiler.

The root cause of the incident was:

(The retention of records of all required monitoring data and support information shall be kept for a period of five years from the date of the report as per the WAC regulation (173-401-615))

☒ Identified for the first time

☐ Identified as a recurrence (explain previous incident(s) below – provide dates)

Are the emissions from the incident exempted by the NSPS or NESHAP "malfunction" definitions below?

☐ No

☒ Yes (describe below)

The root cause of this event was failed soot blower lances that resulted in heat carryover to the economizer section, which resulted in steam drum level fluctuations that tripped the boiler.

*Definition of NSPS "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 60.2*

*Definition of NESHAP "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 63.2*

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

The root cause of this event was failed soot blower lances that resulted in heat carryover to the economizer section, which resulted in steam drum level fluctuations that tripped the boiler. The soot blower lances will be repaired.

Description of corrective action to be taken (include commencement and completion dates):

See above

If correction not required, explain basis for conclusion:

See above

Attach Reports, Reference Documents, and Other Backup Material as Necessary. This report satisfies the requirements of both NWCAA regulation 340, 341, 342 and the WAC regulation (173-400-107).

Is the investigation continuing? ☒ No ☐ Yes

Is the source requesting additional time for completion of the report? ☒ No ☐ Yes

Based upon information and belief formed after reasonable inquiry, I certify that the statements and information in this document and all referenced documents and attachments are true, accurate and complete.

Prepared By: \_ Tim Figgie\_ Date: \_August 4, 2011\_

Responsible Official or Designee: \_\_\_\_\_

Date: \_\_\_\_\_